

Emotion Regulation, Theory of Mind, and Attachment to Parents and Peers Among Turkish Adolescent Offenders and Victims: A Single-Center, Cross-Sectional, Case-Control Study

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ABSTRACT

Background: There may be many risk factors for both youth offending and victimization. In our study, we aimed to compare youth offenders and victims in terms of attachment characteristics, emotion regulation, and mind-reading skills.

Methods: This study employed a single-center, cross-sectional, case-control design. Kiddie and Young Adult Schedule for Affective Disorders and Schizophrenia Present and Lifetime Version along with diagnostic criteria of Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, were administered by clinicians. Mind-reading skills were assessed with Reading the Mind in the Eyes task (RMET) and Faces test. Difficulties in Emotion Regulation Scale (DERS) and Inventory of Parent and Peer Attachment-Short Form (IPPA-SF) were used for assessing attachment and emotion regulation properties.

Results: When we compared the two groups in terms of IPPA-SF, DERS, RMET and Faces test, we found that victimized and offending youth did not differ significantly in terms of attachment to peers and communication/trust domains of parental attachment. Youth offenders and victims differed significantly in terms of DERS- Non-acceptance and Goals both ($P = .031$ and $.045$; respectively). Offending youth scored significantly higher in Non-acceptance, while victimized youth scored significantly higher in Goals.

Conclusion: Offending youth were more alienated from their parents, were experiencing problems with emotional acceptance, and had lower theory of mind and emotion recognition skills compared to victimized youth. Therefore, protective interventions supporting parent-adolescent communication/attachment, as well as emotion recognition/regulation and theory of mind skills of youth, may protect children from both victimization and delinquency.

ARTICLE HISTORY

Received: December 26, 2022

Accepted: August 20, 2023

Publication Date: October 13, 2023

INTRODUCTION

“Child offenders” are juveniles being investigated/prosecuted for allegedly committing acts defined as “crimes” in the law, or for whom security measures¹ were applied for the acts they committed.² Most of the offending children are male adolescents^{3,4} with rates of offence being prominent between 14 and 18 years old.³ Many individual, familial, and environmental factors play a role in the delinquency of children. “Victimized children” are children who have been harmed due to neglect, abuse, violence, delinquency, migration, employment, or loss

of parents.⁵ Factors related to parents or caregivers, the social structure of the family, and society are among the causes of child victimization.⁶ In the legal system in Turkey, the age of criminal responsibility is determined as 12, and it is decided that children below this are not responsible for their actions.¹ The criminal responsibility of children between the ages of 12 and 15 who are offended by crime is evaluated according to the relevant law article.⁷ According to Turkish Institute of Statistics, the number of legal proceedings concerning children was 450803 for the year

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Cite this article as: İmrek Y, Öztürk Y, Balta Kesikbaş B, Taşkan M, Göl Özcan G, Tufan AE. Emotion regulation, theory of mind, and attachment to parents and peers among Turkish adolescent offenders and victims: A single-center, cross-sectional, case-control study. *Psychiatry Clin Psychopharmacol.* 2023;33(4):316-325.



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2020.⁸ Less than half (43.8%) of the children were involved as offenders, while 37.9% of the children were victims. In accordance with previous studies, the majority of involved children were males between 15 and 17 years old. The most common youth offenses for the year 2020 were injuring others (31.4%) and burglary (30.5%). Victimized children were almost evenly divided across genders (54.0% male), and the majority were injured by other children or adults (55.3%), while the second most common cause of injury was intra-familial violence (14.5%).⁸ Among child-related factors for offending and victimization, attachment, emotion regulation, and theory of mind have been widely studied.^{9,10} However, adolescent offenders and victims from Turkey have not been evaluated for those domains previously.

Attachment is the emotional bond that infants form with caregivers, which later generalizes to other emotionally salient people. Neglectful parents lead the children to form insecure and anxious attachments.¹¹ Children with insecure and anxious attachment may be under increased risk of being dragged into crime by displaying aggressive and problematic behaviors.¹¹ Alternatively, children without adequate parental supervision and guidance have an elevated risk of victimization. A recent meta-analysis found that insecurely attached adults employ dysfunctional parenting styles, which may lead to elevated risks for child maltreatment.¹² In a related study, adults with a history of childhood sexual abuse were found to report elevated attachment anxiety in romantic relationships.¹³ In another study examining the roles of perceived maternal and paternal attitudes and parental attachment styles among delinquent and non-delinquent children, children exposed to negative parental attitudes (punitive, authoritarian, permissive, negligent, etc.) were found to display elevated levels of aggression and increased risks of criminal offending. In that study, elevated parental acceptance of and interest about children were found to protect against breaking school rules, status crimes, destruction of property, physical aggression, and burglary.¹¹

“Emotion regulation” involves the recognition of experienced emotions, modulating their expressions,

awareness of relationships between emotions, and different situations and responding to individual needs by appropriate use of emotions.¹⁴ Both victimized children and offending youth may have difficulties in emotion regulation skills, and the risk of displaying problematic behaviors may positively correlate with emotion regulation problems. Victimized children exposed to neglect/abuse were reported to experience difficulties in differentiating emotional facial expressions, display biased reactions to expressions of anger, have elevated emotional lability, and express their emotions in socially inappropriate ways.¹⁵ Although less recognized, emotional abuse may be more closely related with emotional dysregulation among victimized children compared to physical and sexual abuse. Supporting this view, emotional abuse/neglect was found to be related with emotion regulation difficulties in a clinical sample, independent of physical and sexual abuse.¹⁶ Even lower levels of victimization, such as exposure to peer bullying may lead to problems of emotion regulation, increasing emotional rumination, and reducing emotion awareness.¹⁷

“Theory of mind” is characterized as the ability to understand other people’s mental states such as wishes, beliefs, and intentions, and to interpret their behaviors in terms of desires, emotions, and other internal experiences. Ward et al¹⁸ found that people involved in criminal proceedings displayed lower levels of processing information about their own and others’ mental states. Another study found that victimized children involved in legal processes had reduced ability to assess other’s mental states.¹⁹ Various studies have reported that children exposed to violence display reductions in cognitive and emotional domains of theory of mind skills compared to those without.²⁰ Another study evaluated the effects of childhood neglect/abuse on mind-reading skills and reported that those with reduced performance had a history of emotional and physical abuse in the past.¹⁹ In a prospective study examining the connection between theory of mind, peer victimization and reactive and proactive aggression, theory of mind and cognitive assessment interviews were conducted with children before they started school, and information about their behavior was obtained from the teachers after their enrollment in school. The authors found that reduced theory of mind skills among victims of moderate to high levels of peer bullying were associated with reactive aggression, while elevated skills among victims of high levels of peer bullying were associated with proactive aggression.²¹ Some studies evaluated the theory of mind skills among sexual offenders and found their performance to be impaired compared to controls.¹⁸

The results reported in the literature support complex interactions among attachment security, emotion regulation skills, and theory of mind skills in youth offending and victimization. Therefore, we aimed to compare youth offenders and victims in terms of attachment

MAIN POINTS

- Offending youth were overwhelmingly males, significantly more alienated from their parents, refused their emotions, and scored lower in performance and total intelligence quotients.
- Victimized youth experienced significantly more common problems in emotion regulation goals and identified positive emotions better compared to neutral and negative ones.
- Offending youth had more difficulty recognizing positive emotions than victimized youth.
- Victimized children had more difficulties in accepting their emotional goals, while offenders refused their emotions.
- Male gender and alienation in parental attachment predicted delinquent behavior.

characteristics, emotion regulation, and mind-reading skills in our study.

The aim of our study is to compare young offenders and victims in terms of emotion regulation, mind-reading skills, and attachment characteristics. The hypothesis of our study was to determine the risk factors for both committing and victimizing young people, especially the communication with their parents, emotion regulation, and mind-reading skills of young people who have committed crimes may be lower. Recent literature has suggested that attachment pattern, theory of mind, and empathy skills may be associated with aggression, delinquency, or being a victim of crime.^{22,23} In our country, studies with offenders and victim adolescents are limited in the current literature, and our study will contribute to the literature for the Turkish adolescent population.

MATERIAL AND METHODS

Study Center, Sampling, and Ethics

This study employed a single-center, cross-sectional, case-control design. It was performed at our hospital's Child and Adolescent Psychiatry Outpatient Clinic between January and July 2021. Institutional review board approval was obtained from the Clinical Research Ethics Committee of Bolu Abant İzzet Baysal University (Date: 08.12.2020, Decision No: 2020/292) and the study was conducted according to principles set forth in the Declaration of Helsinki and local laws and regulations. The sample of the study consisted of patients who applied to our hospital for forensic psychiatric evaluation. All literate individuals between the ages of 12 and 18 who applied to the outpatient clinic for forensic psychiatric evaluations between January 2021 and July 2021 and gave written consent (for young people) and informed consent (for parents) were included in the study. Individuals with a diagnosis of intellectual disability, autism spectrum disorder, additional chronic medical disorders, missing data in the forms provided, lack of parental informed consent/lack of written consent of young people, and vision loss were excluded from the study.

Study Procedures

An experienced child and adolescent psychiatrist conducted the initial interview with 80 cases (35 victims and 45 offenders) referred for forensic psychiatric evaluations. Another senior resident blinded to victim/offender status conducted a semi-structured interview (i.e. Schedule for Affective Disorders and Schizophrenia for School-Aged Children Kiddie-SADS-Present and Lifetime Version; K-SADS-PL-) to ascertain diagnoses and exclude comorbidities. As a result of this evaluation, 6 victimized youth were excluded for age < 12 years, and 1 each was excluded for limited Turkish proficiency, limited reading

comprehension, and intellectual disability (i.e. total excluded=9). Among youth offenders, 5 with intellectual disability, 3 with illiteracy, and 4 with limited reading comprehension were excluded for a total of 12 children. Therefore, a total of 59 youth (26 victims and 33 offenders) were included in the study (Figure 1). The children completed the psychometric measures after the interview.

Measures

Sociodemographic Data Form: This form included questions about gender, participants' age, grade, reasons for forensic referral, number of siblings, physical/mental disorders requiring treatment in children, parents' age, education, and occupation. It was developed by the researchers.

Kiddie Schedule for Affective Disorders and Schizophrenia for School-Aged Children Kiddie Present and Lifetime Version: Importantly, K-SADS-PL was developed by Kaufman and Birmaher²⁴ according to the The Diagnostic and Statistical Manual of Mental Disorders (DSM) third and fourth editions diagnostic criteria. It was reorganized in 2013 to be compatible with DSM-5 diagnoses. Ünal et al²⁵ (2016) conducted a Turkish validity and reliability study of the revised version. The K-SADS-PL is a semi-structured interview combining information from parents and youth to determine present and lifetime psychopathologies and was applied to parents and adolescents in this study.

Inventory of Parent and Peer Attachment-Short Form: This scale was developed to measure adolescents' attachment to their parents and peers, and it consists of 24 items (12 concerning parents and the rest about peers). Items in the scale are scored in a 5-point Likert-type anchor from 1 ("never") to 5 ("always"). The IPPA-SF evaluates attachment according to domains of trust, communication, and alienation, and a total score is obtained by adding these dimensions.²⁶ In this study, adolescents completed the IPPA-SF.

Difficulties in Emotion Regulation Scale: The DERS is a 5-point Likert-type (1=Never, 5=Always) self-report scale that assesses current and clinically significant difficulties in emotion regulation. It consists of 36 items. It was developed by Gratz and Roemer²⁷ in 2004, and its Turkish reliability and validity were established by Rugancı and Gençöz²⁸ in 2010. It consists of 6 subscales: nonacceptance, goals, impulsivity, awareness, strategy, and clarity. The DERS was completed by the adolescents.

Reading Mind in the Eyes Test: The original RMET was created by Baron-Cohen²⁹ et al. to evaluate the social cognition and theory of mind skills of kids with autism spectrum disorders. A revised final version containing 36 items and 4 response options (1 target, 3 distractors) was published in 2001. The participant is asked to choose the option that best represents the mental state of the person in the picture shown. Therefore, the test is considered to be an indicator of emotion recognition and mind-reading

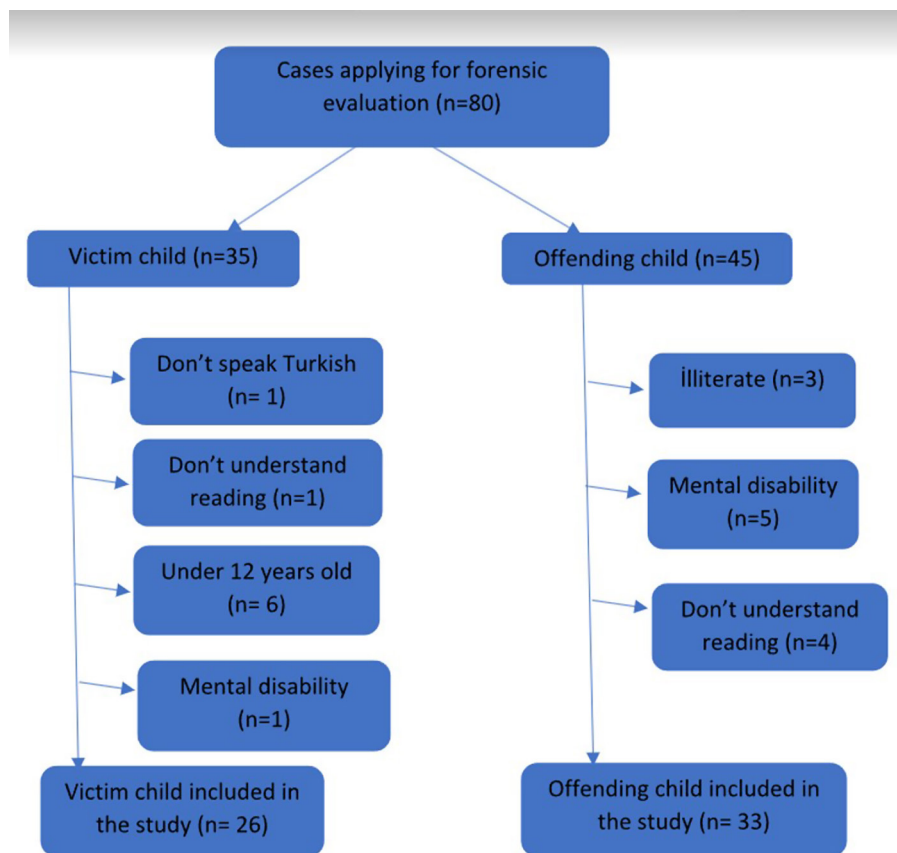


Figure 1. Study flowchart.

skills, which are important aspects of Theory of Mind. Yıldırım et al³⁰ conducted the Turkish reliability and validity study. A senior child psychiatry resident applied the RMET to participants in this study.

Faces Test: Ekman³¹ developed this test to determine the universal emotions that people describe through facial expressions. The 6 facial expressions includes fear, joy, confusion, anger, sadness, and disgust, and the test includes items evaluating all 6. The test is accepted to evaluate emotion recognition abilities, and its reliability and validity in Turkish were previously established both among adults and youth.^{32,33} The faces test was applied by the senior child and adolescent psychiatry resident to the participants in this study.

Statistical Analysis

Statistical analysis of the data for this study was carried out using the Statistical Package for the Social Sciences version 23.0 (IBM SPSS Corp.; Armonk, NY, USA) software. Categorical variables about sociodemographic and clinical variables of cases were reported as numbers and percentages for descriptive variables. The classified categorical variables were compared using the crosstab chi-square test. We used the Fisher-Freeman-Halton test

to compare both groups for family structure, maternal education, and paternal education. Quantitative variables were summarized as either arithmetic means and standard deviations or medians and interquartile (IQR) ranges depending on the presence of outliers and assumptions of normality. Assumptions of normality were evaluated through Kolmogorov-Smirnov test. Bivariate comparisons were conducted with the chi-square test (with Yates' correction and Fisher's exact test as needed) and Student's *t*-test for independent groups or Mann-Whitney *U*-test depending on normality. If it is a normal distribution, descriptive statistics are given as mean \pm standard deviation. If it is not a normal distribution, it was given as median (min-max), Median (IQR), or median (Q1-Q3). The effect sizes were Cohen's *d* for parametric tests (i.e. *t*-test), r (z/\sqrt{n}) for Mann-Whitney *U*-test and phi/Cramer's *V* for chi-square tests. We evaluated the contribution of offending youth risk factors with logistic regression analysis since we have limited sample size and offending and victimization youth were nominally coded. We used the enter method for this. We entered IPPA-SF alignment in the first step, DERS non-acceptance and goal in second step, RMET positive line count in third step, faces test in fourth step, and gender as categorical variables in last step. *P* value was accepted as $<.05$.

Table 1. Sociodemographic and Familial Features of Victimized and Offending Youth Referred for Forensic Psychiatric Evaluation at a Tertiary Treatment Center in Turkey

Mean (SD) or n (%)	Victimized Youth (n=26)	Offending Youth (n=33)	P	Effect Size
Age (years)*	14.6 (2.2)	15.5 (1.4)	.078	-
Gender—female	24 (92.31)	4 (12.12)	<.001	0.797
Family structure	Nuclear	18 (54.55)	.102	
	Extended	3 (9.09)		
	Divorced	9 (27.27)		
	Parental loss	3 (9.09)		
Maternal education	Illiterate	5 (15.15)	.161	
	Basic literacy	-		
	Primary school	14 (42.42)		
	Secondary school	4 (12.12)		
	High school	5 (15.15)		
Paternal education	Illiterate	2 (6.06)	.746	
	Basic literacy	3 (9.09)		
	Primary school	13 (39.39)		
	Secondary school	9 (27.27)		
	High school	6 (18.18)		
Family history of medical disorder	8 (30.76)	13 (39.39)	.680	
Family history of mental disorder	7 (26.92)	13 (39.39)	.467	

*Student’s t-test.

RESULTS

Sociodemographic Characteristics

Within the study period, 59 children (33 offenders and 26 victims) were enrolled. Of the cases, 28 (47.46%) were females and 31 (52.54%) were males. The mean age of the cases was 15.1 ± 1.8 years. We did not find a statistically significant difference between the 2 groups in terms of the children’s ages, family structures, maternal and paternal education levels, and family histories of mental/medical disorders requiring treatment. However, offenders and victims differed significantly in terms of gender. We found a statistically significant difference between the groups in terms of gender ($P < .05$) due to most of the victimized youth being females (i.e., 92.31% vs. 12.12%) (Table 1).

Psychiatric Diagnoses

Conduct disorder (CD) was the most common diagnosis in the whole sample and among youth offenders, followed by attention deficit/hyperactivity disorder (ADHD) and specific learning disorder. On the other hand, the most common disorders among victimized children were specific learning disorder, post-traumatic stress disorder, and conduct disorder. Psychiatric disorders in youth offenders and victims are listed in Table 2.

Results of Intelligence Tests

There was no statistically significant difference between the 2 groups in Wechsler Intelligence Test for Children-Revised

(WISC-R) Verbal and Wechsler Adult Intelligence Scale-Total scores. Offending youth scored significantly lower than victimized children in WISC-R performance and total scores ($P < .05$ for both) (Table 3).

Results of Psychometric Tests

When we compared the 2 groups in terms of RMET, Faces test, IPPA-SF, and DERS, we found that victimized youth performed significantly better in identification of positive emotions within the RMET tests ($P = .003$, Cohen’s $d = 0.39$)

Table 2. Psychiatric Diagnoses of Victimized and Offending Youth Referred for Forensic Psychiatric Evaluation at a Tertiary Treatment Center in Turkey

	All Participants n (%)	Victimized Child n (%)	Offending Child n (%)
Conduct disorder	18 (30.51)	4 (6.78)	14 (23.7)
Attention deficit and hyperactivity disorder	12 (20.33)	1 (1.69)	11 (18.6)
Specific learning disorder	10 (16.95)	7 (11.92)	3 (5.08)
Post-traumatic stress disorder	4 (6.78)	4 (6.78)	-
Acute stress disorder	3 (5.08)	3 (5.08)	-
Borderline personality disorder	2 (3.39)	1 (1.69)	1 (1.69)
Oppositional defiant disorder	2 (3.39)	-	2 (3.39)
Adjustment disorder	1 (1.69)	1 (1.69)	-
Major depressive disorder	1 (1.69)	1 (1.69)	-
Schizophrenia	1 (1.69)	-	1 (1.69)

Table 3. Intelligence Test Results of Victimized and Offending Youth Referred for Forensic Psychiatric Evaluation at a Tertiary Treatment Center in Turkey

Mean ± SD		Victimized Youth (n=26)	Offending Youth (n=33)	<i>P</i>
WISC-R	Verbal IQ	80.53 ± 21.86	69.40 ± 23.35	.146
	Performance IQ	92.06 ± 14.52	77.90 ± 15.98	<i>.008</i>
	Total IQ	84.88 ± 16.52	71.40 ± 18.60	<i>.027</i>
WAIS-R total		94.63 ± 16.18	88.22 ± 14.43	<i>.402</i>

WISC-R, Wechsler Intelligence Test for Children-Revised. IQ: Intelligence Quotient. WAIS-R: Wechsler Intelligence Test for Adults - Revised. *p* < 0.05 significance are indicated in italicized.

and in identification of facial emotions (*P* = .046, Cohen’s *d*=0.26). We also found that victimized and offending youth did not differ significantly in terms of attachment to peers

Table 4. Results of Psychometric Tests of Victimized and Offending Youth Referred for Forensic Psychiatric Evaluation at a Tertiary Treatment Center in Turkey

	Victim Child (n=26)	Offending Child (n=33)	<i>P</i>	Effect Size
IPPA-SF-peer attachment—median (IQR)*				
Trust	13 (4)	12 (4)	.155	
Communication	12 (3.50)	10 (3)	.090	
Alienation	9 (4.50)	11 (5)	.304	
Total	34 (5.50)	34 (4.50)	.248	
IPPA-SF-parent attachment—median (IQR)*				
Trust	13 (4)	12 (5)	.304	
Communication	12 (2)	12 (2)	.097	
Alienation	8 (3)	12 (6)	.010	0.33
Total	34 (3)	36 (3.5)	.392	
DERS—mean ± SD**				
Awareness	19.61 ± 5.14	20.55 ± 4.54	.465	
Clarity	13.16 ± 4.44	13.39 ± 4.76	.823	
Nonacceptance	11.77 ± 4.93	14.64 ± 4.96	.031	0.58
Strategy	23.77 ± 9.96	20.48 ± 5.87	.144	
Impulsivity	16.23 ± 6.33	16.79 ± 6.28	.737	
Goal	17.00 ± 4.97	14.67 ± 3.76	.045	0.53
Total	98.77 ± 25.48	97.45 ± 19.62	.824	
RMET—median (IQR)*				
Positive true	7 (2)	5 (3)	.003	0.39
Negative true	9 (3)	8 (2)	.242	
Neutral true	5 (2)	4 (3)	.073	
Total	16 (2)	15 (3.5)	.287	
Faces test- median rank (IQR)*				
	20 (6.5)	18 (7)	.046	0.26

DERS, Difficulties in Emotion Regulation Scale; IPPA-SF, Inventory of Parent and Peer Attachment-Short form; IQR, interquartile range; RMET, reading mind in the eyes.

*Mann-Whitney *U*-test.

**Student’s *t*-test.

and communication/trust domains of parental attachment. However, offending youth scored significantly higher in terms of alienation domain of parental attachment with a moderate effect size (*P* = .010, *d*=0.33). Youth offenders and victims differed significantly in terms of DERS-nonacceptance and goals, both at moderate effect sizes (*P* = .031 and .045 and Cohen’s *d*=0.58 and 0.53, respectively). Offending youth scored significantly higher in nonacceptance, while victimized youth scored significantly higher in goals (Table 4).

We also compared the female and male youth in terms of IPPA-SF-peer and parent forms, DERS, RMET, and faces test. Difficulties in Emotion Regulation Scale-nonacceptance in male youth, DERS strategy and goal in female youth were found to be statistically significantly higher. In addition, we found a statistically significant decrease in RMET-positive, true neutral, true, and total in male youths (Table 5).

Table 5. Results of Psychometric Tests of Female and Male Youth Referred for Forensic Psychiatric Evaluation at a Tertiary Treatment Center in Turkey

	Victim Child (n=26)	Offending Child (n=33)	<i>P</i>	Effect Size
IPPA-SF-peer attachment—Median (IQR)*				
Trust	13 (5)	12 (5)	.486	
Communication	12 (4)	11 (3)	.250	
Alienation	9 (5)	11 (5)	.432	
Total	34 (6)	34 (6)	.668	
IPPA-SF-parent attachment—Median (IQR)*				
Trust	12 (4)	13 (4)	.428	
Communication	12 (2)	12 (2)	.107	
Alienation	9 (3)	11 (6)	.098	
Total	34 (3)	36 (4)	.187	
DERS—mean ± SD**				
Awareness	19.71 ± 5.20	20.52 ± 4.45	.526	
Clarity	13.25 ± 4.48	13.32 ± 3.67	.946	
Nonacceptance	11.93 ± 4.85	14.68 ± 5.06	.038	0.555
Strategy	24.21 ± 9.62	19.87 ± 5.66	.037	0.550
Impulsivity	17.18 ± 6.77	15.97 ± 5.80	.463	
Goal	17.43 ± 4.89	14.13 ± 3.39	.004	0.784
Total	100.96 ± 25.63	95.39 ± 18.61	.340	
RMET—median (IQR)*				
Positive true	7 (2)	5 (3)	.002	0.401
Negative true	9 (3)	8 (2)	.268	
Neutral true	5 (2)	4 (3)	.036	0.272
Total	20 (5)	17 (7)	.035	0.275
Faces test- Median rank (IQR)*				
	16 (2)	15 (3)	.253	

DERS, Difficulties in Emotion Regulation Scale; IPPA-SF, Inventory of Parent and Peer Attachment-Short form; IQR, interquartile range; RMET, rReading mind in the eyes.

*Mann-Whitney *U*-test.

**Student’s *t*-test.

Predictors of Offending Factors

We performed logistic regression analysis to evaluate the contribution of offending youth risk factors since we have limited sample size and offending and victimization youth were nominally coded. We used the enter method for this. Our dependent variable was the offending and victimized youth group. We entered IPPA-SF alienation in the first step, DERS non-acceptance and goal in second step, RMET positive line count in third step, faces test in fourth step and gender as categorical variables in the last step. The explanation of model was between 17.2% and 75.8% (Nagelkerke R²: 0.172-0.758—for the first: 0.172, for the second: 0.387, for the third: 0.410, for the fourth: 0.413, and for the last: 0.758). As a result, gender (male) and IPPA-SF alienation predicted offending factors (Table 6).

DISCUSSION

This study aimed to evaluate offending and victimized youth referred for forensic psychiatric evaluation at a tertiary treatment center in terms of attachment properties, emotion regulation strategies, theory of mind, and emotion recognition skills. We found that the offending youth were overwhelmingly males, significantly more alienated from their parents, refused their emotions, and scored lower in performance and total IQs. Victimized youth experienced significantly more common problems in emotion regulation goals and identified positive emotions better compared to neutral and negative ones. We also discovered that although male children had issues with non-acceptance emotion management skill, recognized positive, neutral, and overall emotions, and female youth had issues with emotion regulation strategy and goals.

The main finding of our study was that offending youth had more difficulty recognizing positive emotions than victimized youth. A review of 28 studies found that there was no difference in first-level theory of mind skills between criminals and non-criminals, and findings were inconsistent for second-order and advanced theory of mind (ToM) skills.³⁴ In a study of 74 offenders and 65

healthy controls, offenders had lower scores than non-offenders in the RMET. Compared to non-offenders, offenders performed worse at recognizing sadness but were better at recognizing fear in the emotion attribution task.³⁵ In another study that included 19 perpetrators of intimate partner violence and 21 controls, offenders obtained lower scores on RMET than controls. Romero-Martinez³⁶ differentiated the answers of offenders in RMET according to emotional valence, similar to ours, and found that offenders scored significantly lower than controls on neutral emotions. In a recent study with adolescent offenders, 45 males (22 incarcerated adolescents and 23 controls) were evaluated, and incarcerated male offenders were found to perform worse in recognition of interest, anxiety, and amusement.³⁷ Two controlled studies (on 43 offending and 47 control youth³⁸ and on 20 offending and 38 control youth³⁹) have shown that delinquent children had lower scores than non-offenders.

Depending on the type of victimization, the gender of the victim, or the intensity of the emotion expressed, victims' recognition of emotional expressions may vary.^{40,41} Victims have been shown to be generally less accurate than controls at recognizing emotional expressions, particularly anger, fear, and disgust.⁴⁰ Victims may over-interpret others' intentions as hostile⁴² and misclassify fear as anger and anger as fear.⁴⁰ Findings in the literature, contrary to our study, compared offending people to healthy controls and were inconsistent. Offending children's difficulty in recognizing positive emotions compared to victims may be a risk factor that leads them to delinquency. However, studies with larger samples are needed in this area. We also found male youth had problems in identifying positive, neutral, and total emotions. Studies have shown that girls use emotion regulation strategies better than boys, and theory of mind is more developed in girls.^{43,44} Our finding that the skills of recognizing positive emotions from the eyes and facial emotion recognition skills of the victimized youth were better than the offending youth might be due to the fact that the victimized youth were more of the female gender.

We found that offending youth were more alienated from their parents than victims. The parent-child attachment relationship is a very important regulator of the child's physiological response to stress. In terms of attachment, studies in the literature have compared victims and healthy controls. In a study examining attachment styles in sexually abused preschool children, children who were victims of sexual abuse exhibited more insecure attachment than controls. Abused boys have been found to be particularly at risk for excessive hyperactivation and disorganization.⁴⁵ Condino et al⁴⁶ evaluated 31 women victims of intimate partner violence in terms of attachment style and found that the majority of the victims (68.0%) had an insecure attachment. A meta-analysis in 2021 reported significant associations between attachment anxiety and avoidance

Table 6. Predictors of Offending Youth's Contributing Factors to Delinquency

Variables	Exp(B)	P	95% CI
IPPA-SF—parent alienation	1.460	.045	1.008-2.115
DERS—non-acceptance	1.089	.394	0.895-1.325
DERS—goals	0.954	.728	0.734-1.325
RMET—positive true	0.852	.604	0.465-1.560
Faces test	1.054	.803	0.699-1.590
Gender	0.010	<.001	0.001-0.109

DERS, Difficulties in Emotion Regulation Scale; Exp(B), odd ratio; IPPA-SF, Inventory of Parent and Peer Attachment-Short form; RMET, reading mind in the eyes.

dimensions and intimate partner violence victimization.⁴⁷ In another study examining the differences in attachment anxiety and avoidance between traumatized juvenile offenders and maltreated non-offending adolescents from care services showed that both groups reported equally high levels of attachment anxiety and avoidance.⁴⁸ Previous studies have reported that girls show better than boys in terms of attachment to peers and parents.^{49,50} This finding may be that the majority of the victimized youth were of the female gender and the offending youth were of the male gender. More than the victimized children, the alienation of the offending children from their parents may be a risk factor for them to commit crimes again since they are robbed of parental control and are separated from the support they will receive from their parents.

We found that victimized children had more difficulties in accepting their emotional goals, while offenders refused their emotions. Adolescents with emotional regulation problems were reported to be at higher risk of being exposed to cyberbullying.^{51,52} In a study evaluating 24 victimized youth and 21 controls, the groups differed significantly in emotion recognition, with victimized youth displaying lower accuracy of recognition for neutral faces and an elevated bias to evaluate them as angry.⁵³ According to those results in the literature, emotion recognition and regulation problems may be risk factors for both youth offending and victimization. However, our results may also be confounded by comorbidities among both youth offenders and victims. Offending youth were also diagnosed with ADHD and CD in our sample, while specific learning disorders and conduct disorder were also common among victimized youth. Children with diagnoses of CD, ADHD, or SLD may have reduced emotional awareness and have difficulties in regulating negative emotions, especially. Further studies on offending and victimized youth may discern state- and trait-related factors affecting emotion recognition and regulation.

Another finding of our study was that male gender and alienation in parental attachment predicted delinquent behavior. Spencer et al⁵⁴ (2021) investigated theory of mind, empathy, and moral traits in the offending and non-offending groups in terms of gender. They found that male offending group had lower ToM and empathetic traits than both female offending and non-offending groups.⁵⁴ Gender may be more associated with delinquent behavior, as the male gender exhibits delayed language development,⁵⁵ higher incidence of crime-related psychiatric disorders (ADHD, CD),⁵⁶ and poor performance in social cognitions such as ToM and empathy (Spencer et al 2021). In a meta-analysis of 55537 participants, poor attachment to parents was shown to be significantly related to delinquency in boys and girls.⁵⁷ Our finding is consistent with the literature. When dealing with delinquent behavior, it may be a good option to consider the characteristics of

parental attachment and to adopt attachment-focused therapy approaches in treatment.

The results of our study should be assessed within its limitations. First, the results appear to be valid for only 1 study center and cannot be generalized to other study centers and samples. Second, we did not evaluate for recidivism among offending youth. Third, the callous and unemotional characteristics as defined within the DSM-5 were not evaluated among youth with CD. Fourth, we did not evaluate subtypes of victimization (e.g., intra-familial violence, peer conflict, sexual abuse, etc.). Fifth, attachment and emotion regulation properties were evaluated with self-report scales, and those may be associated with recall and reporting bias. Sixth, we did not evaluate to examine the childhood trauma, type, and number of violent behaviors of the cases. Seventh, we could not evaluate the effects of family structure, parental education levels, and similar sociodemographic characteristics on empathy, ToM, and attachment, as the number of participants in our study was limited and additional analyses might increase the probability of type-1 error. Further studies may evaluate sociodemographic characteristics with larger samples. Eighth, we could not do power analysis because studies in this area are limited in our country. We have given the effect sizes for the results that we find significant. Finally, delinquent and victim children were included in our study, and no comparison could be made with healthy controls. Future studies may include healthy controls.

Regardless of its limitations, the results of our study suggest that offending youth were more alienated from their parents, were experiencing problems with emotional acceptance, and had lower theory of mind and emotion recognition skills compared to victimized youth. On the other hand, victimized youth in our sample experienced greater difficulties in discerning goals of emotion regulation and seemed to perform better in the identification of positive emotions. The relationship between attachment, theory of mind, and emotion regulation skills in the recent literature and our finding that male gender and parental attachment alienation predict criminal behavior in our study may contribute to the literature. Therefore, protective interventions supporting parent-adolescent communication/attachment, as well as emotion recognition/regulation and the theory of mind skills of youth, may protect children from both victimization and delinquency.

Ethics Committee Approval: This study was approved by Ethics Committee of Bolu Abant İzzet Baysal University (Approval No: 292, Date: December 8, 2020).

Informed Consent: Written informed consent was obtained from the participants' parents who agreed to take part in the study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept - Y.İ., Y.Ö.; Design - Y.İ., Y.Ö.; Supervision - Y.Ö., A.E.T.; Resources - Y.İ., G.G.Ö., M.T., B.B.K.; Materials - Y.İ., B.B.K., G.G.Ö.; Data Collection and/or Processing - Y.İ., Y.Ö.; Analysis and/or Interpretation - Y.İ., A.E.T.; Literature Search - Y.İ., Y.Ö.; Writing - Y.İ., Y.Ö.; Critical Review - Y.Ö., A.E.T.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

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